

ABSTRACT OF THE DISCLOSURE

The semiconductor module includes a substrate, at least one semiconductor, and electrical contacts. The substrate includes a base layer having a substantially planar base layer first surface opposing a substantially planar base layer second surface. The base layer first surface is exposed to atmosphere and where the base layer is electrically conductive. The substrate also includes an insulator layer having a substantially planar insulator layer first surface opposing a substantially planar insulator layer second surface. The base layer second surface and the insulator layer first surface are adjacent and contiguous to one another and where the insulator layer is electrically non-conductive. Finally, the substrate includes a conductive layer having a substantially planar conductive layer first surface opposing a substantially planar conductive layer second surface. The insulator layer second surface and the conductive layer first surface are adjacent and contiguous to one another and where the conductive layer is electrically conductive.